LBNL DR Potential Study
Model Errata Report – Results in ~3% Adjustment in Potential
June 7, 2016

Summary: This memo summarizes analysis of an error we recently discovered regarding cost accounting in the Phase 1 DR Potential Model and how it has been addressed. Correcting and updating the model results in *INCREASED estimates for cost effective potential DR resources in California by about 3%.* As a point of reference, the scenario-to-scenario variation in DR resource is about 30% (e.g., the difference in DR potential between the "Medium" (6 GW) and "High" (9 GW) scenarios in the table below for 2025 is about 3 GW). The error we uncovered is small compared to this underlying uncertainty in future potential.

To ensure stakeholders have access to the most accurate results, we are releasing an updated set of detailed outputs from the Phase 1 model that includes the error correction. These updates results will be available on the CPUC website, and also include costs broken down into component categories (the previous results only reported on the total cost of each resource). When Phase 2 is complete the results will be updated again, including improved treatment of energy efficiency and other adjustments to the framework.

Description of the issue: The error was caused because the DR cost accounting code had a sign error. The revenue from expected energy market participation was ADDED instead of SUBTRACTED from the total cost of DR. **The mean effect results in a 5% increase in the cost estimates (i.e., previous cost estimates were 5% too high), and 50% of cases have error less than 3%** (illustrating how low the typical day-ahead energy market revenue expectations are compared to the cost of DR). In the only most extreme 5% of cases, the error introduced is 20% or more.

The impact of the error on the overall results for DR potential is smaller still than the average scale of the individual cost estimate errors. The expected DR potential below a particular price referent increases as cost decreases, so with the updated cost numbers the values of "DR potential below $200/kW-year" go up. **The overall effect of correcting the cost accounting issue is a 2-7% increase in expected DR potential (see table below, modified from the Phase 1 Interim Report).**

Next Steps: This error has been noted and corrected as part of the development of the Phase 2 modeling framework, which will result in refreshed estimates for DR potential across all of the scenarios. We are releasing this memo describing it and an updated set of detailed model results data.

Results from Table 9 of the Phase 1 Report with "New" Values noted for comparison

Scenarios	*Year*	*OLD Value (MW)*	*NEW Value (MW)*	*% difference*
BAU	2014	3,200	3,300	***3%***
	2020	3,900	4,000	***3%***
	2025	4,500	4,600	***2%***
Medium	2014	3,200	3,300	***3%***
	2020	4,400	4,500	***2%***
	2025	5,800	6,000	***3%***
High	2014	3,200	3,300	***3%***
	2020	5,400	5,600	***4%***
	2025	8,400	9,000	***7%***